

REMARKS

INTRODUCTION:

As set forth in the preceding section, claim 1 has been amended to correct a typographical error and therefore no new matter has been added by way of the amendment. No claims have been added or cancelled herein.

Claims 1-37 are pending and under consideration. Claims 1, 6, 11, 16, 21, 26, 30, and 34 are independent claims. Reconsideration of the claims in view of the current amendments and the following remarks is respectfully requested.

ALLOWABLE SUBJECT MATTER:

Claims 2, 3, 7, 8, 19, 20, 22, 23, 27, 28, 31, 32 and 37 are indicated as allowable if rewritten in independent form. Applicants will hold the rewriting of these claims in abeyance until the arguments presented herein have been considered.

REJECTIONS UNDER 35 U.S.C. §112:

Claims 1, 6, 11, 16, 21, 26, 30, and 34 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. This rejection is traversed and reconsideration is requested.

MPEP 2163.04 states the following regarding a written description rejection:

A description as filed is presumed to be adequate, unless or until sufficient evidence or reasoning to the contrary has been presented by the examiner to rebut the presumption. See, e.g., *In re Marzocchi*, 439 F.2d 220, 224, 169 USPQ 367, 370 (CCPA 1971). The examiner, therefore, must have a reasonable basis to challenge the adequacy of the written description. The examiner has the initial burden of presenting by a preponderance of evidence why a person skilled in the art would not recognize in an applicant's disclosure a description of the invention defined by the claims. *Wertheim*, 541 F.2d at 263, 191 USPQ at 97.

Further, MPEP 2163B states the following regarding a written description rejection of a new or amended claim:

While there is no in haec verba requirement, newly added claim limitations must be supported in the specification through express, implicit, or inherent disclosure.

Thus, there is no requirement that an amended claim be literally supported by the specification, but rather support may alternatively be through implicit or inherent disclosure.

The Office Action bases the rejection on the added feature “wherein the digital data in the high frequency band is not included in the bandwidth extension information,” which the Office alleges is “new subject matter that was not described in the original disclosure.” Applicants traverse the rejection because support for the added features is both implicitly and literally provided in the specification. Such implicit support may be found for the term at least at FIGS. 8 and 9 and paragraphs [0038], [0043], [0057] and [0058] of the current application, as published. As a non-limiting example, paragraph [0057] states in part:

FIG. 8 illustrates the detailed structure of the side information shown in FIG. 7. Referring to FIG. 8, side information and encoded quantization samples are stored as information of an arbitrary layer. In the present embodiment, if Huffman encoding is performed as lossless-encoding, side information contains Huffman coding model information, quantization factor information, channel side information, and other side information.

Furthermore, paragraph [0034] of the current application clarifies that side information is called bandwidth extension information. Accordingly, FIG. 8 illustrates, and paragraph [0057] describes, that bandwidth extension information does **not** include encoded quantization samples, but rather does include “Huffman coding model information, quantization factor information, channel side information, and other side information,” thus providing support for the feature “wherein the digital data in the high frequency band is not included in the bandwidth extension information,” as used for example in claim 1.

With respect to the rejection of the above-recited claims as failing to comply with the written description requirement, Applicants note that the Office must provide a particular reason or evidence as to why a person skilled in the art would not have reasonably concluded that the inventor(s) had possession of the claimed embodiments in view of the arguments made here, or the rejection of claims 1, 6, 11, 16, 21, 26, 30, and 34 for lack of written description should be withdrawn.

CLAIM OBJECTIONS:

Claim 1 stands objected to due to informalities.

Claim 1 has been amended to address the objections and to clarify the recitations. Accordingly, withdrawal of the objection is respectfully requested.

REJECTIONS UNDER 35 USC § 103:

Claims 1, 4-6, 9-18, 21, 24-26, 29, 30, 33, 34, 36 and 37 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,772,114 to Sluijter et al. ("Sluijter") in view of U.S. Patent No. 6,947,886 to Rose et al. ("Rose"). All rejections are respectfully traversed.

Amended independent claim 1 recites at least the following:

bandwidth-extension-encoding the digital data, outputting bandwidth-limited data, and generating bandwidth extension information, wherein said bandwidth-extension-encoding includes receiving the digital data, slicing off a portion of the digital data in a high frequency band with the remaining portion of the digital data being the bandwidth-limited data, and wherein the bandwidth extension information is information necessary for restoring the sliced portion of the digital data; ...

wherein the digital data in the high frequency band is not included in the bandwidth extension information.

Applicants respectfully submit that the portions of Sluijter and Rose cited in the Office Action, taken alone or in combination, fail to suggest or disclose all of the above-recited features.

The Office Action asserts at page 4-5 that Sluijter illustrates the above-recited "bandwidth-extension-encoding" at FIGS. 1 and 2, where the Office Action asserts that Sluijter illustrates "splitter 7 divid[ing] the digital data into a low-band and high-band data."

Applicants respectfully disagree with the Office Action assertion and request reconsideration for at least the following reasons.

Sluijter is directed to an audio transmission system having a transmitter 1 in which an input signal is split up by splitter 7 into two spectral portions such that the low-frequency signal portion is coded by a regular narrow-band coder 9 while the high frequency portion is coded using a coder 11 that outputs LPC codes and signal amplitude codes (FIG. 1 and col. 2 lines 5-15). Referring to FIG. 1, in Sluijter, the high-frequency range signal from splitter 7 is processed

by the second coder (HFENC) 11 to generate LPC coefficients via an LPC analysis and are then transformed into LSFs that are vector-quantized (col. 2 lines 55-66 or col. 4 lines 7-30).

In contrast, in the above-claimed embodiment, the bandwidth extension information is not the encoded high-frequency band signal, but instead refers to side information “necessary for restoring the sliced portion of the digital data” after slicing off the portion of the input digital data in a high frequency band. In addition, Applicants previously amended claim 1 to clarify that the band-extension information does not include digital data (e.g., audio data) in the high frequency band. Rather, the band-extension information in the presently claimed embodiment is used as information for restoring the sliced portion (i.e. the digital data (or audio data) in the high frequency band) of the digital data. In contrast with claim 1, in Sluijter, the output of HFENC (11) includes high frequency band data in the form of LPC coefficients.

Applicants therefore assert that Sluijter fails to suggest or disclose all of the above-recited features. Furthermore, the Office fails to establish that Rose compensates for the noted deficiencies of Sluijter.

Accordingly, Applicants respectfully submit that independent claim 1 patentably distinguishes over Sluijter and Rose, and should be allowable for at least the above-mentioned reasons. Since similar features recited by each of the independent claims 6, 21, and 26, with potentially differing scope and breadth, are not suggested or disclosed by Sluijter and Rose, the rejection should be withdrawn and claims 6, 21, and 26 also allowed. In addition, since similar features recited by each of independent claims 11, 16, 30, and 34, with scope directed to decoding rather than encoding, are not suggested or disclosed by the same, the rejections should be withdrawn and claims 11, 16, 30, and 34 should also be found allowable.

Further, Applicants respectfully submit that claims 4, 5, 9, 10, 12-15, 17, 18, 24, 25, 27-29, 33, 36 and 37, which variously depend from independent claims 1, 6, 11, 16, 21, 26, 30, and 34, should be allowable for at least the same reasons as claims 1, 6, 11, 16, 21, 26, 30, and 34, as well as for the additional features recited therein.

Insufficient Reason to Combine Sluijter and Rose Articulated

Applicants respectfully submit that the rejections under 35 U.S.C. §103(a) fail to establish a prima facie case of obviousness. To establish a prima facie case of obviousness, there must be: 1) some reason to combine the references; 2) there must be a reasonable expectation of success; and 3) the references must either teach or suggest all the claim limitations or the Office must provide a rationale as to why the differences between the claimed

invention and the prior art are obvious. MPEP 2141.

The reasoning provided at page 6 of the Office Action for combining Sluijter and Rose states:

Since Sluijter et al. and Rose et al. [sic] analogous art because they are from the same field of endeavor, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Sluijter et al. by replacing conventional coder (9 in figure 1) with the coder (in figure 3) of Rose et al. in order to improve bit rates while preserving signal quality.

In *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385, 127 S Ct 1727, 167 LEd2d 705 (U.S. 2007), the U.S. Supreme Court held that in determining obviousness, it is necessary “to determine whether there was an apparent reason to combine the known elements in the fashion claimed” *KSR*, 82 USPQ2d at 1396. Further, “there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR* at 1396, quoting *In re Kahn*.

Applicants assert that the cited rationale for combining Sluijter and Rose is merely a conclusion and therefore fails to meet the standard articulated by the Supreme Court in *KSR International Co. v. Teleflex Inc.* For example, the Office fails to demonstrate *how* replacing the low frequency range encoder 9 of Sluijter with the entropy-coded scalar quantizers (ECSQ) Encoder of Rose would have improved bit rates while preserving signal quality. To the contrary, Applicants submit that the proposed combination of Sluijter and Rose would have changed the principle of operation of Sluijter as described below in more detail. Thus, one skilled in the art at the time of the invention would *not* have understood there to be a reasonable expectation of success in making the proposed combination. This amounts to an improper hindsight reconstruction of the presently claimed invention.

The Proposed Modification Would Change Sluijter's Principle of Operation

If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. MPEP 2143.01 VI citing *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

Here, the Office Action notes at page 5, that Sluijter “fails to explicitly disclose encoding the bandwidth-limited data into a hierarchical structure having a base layer and at least one enhancement layer so as to control a bit rate.” The Office Action then proposes to modify

Sluijter with Rose, and asserts that Rose teaches the missing features. However, the Office Action provides no evidence that such a combination would even be technically feasible.

Regardless, Applicants assert that the Office's proposed replacement of Sluijter's low frequency range encoder 9 with the entropy-coded scalar quantizers (ECSQ) Encoder of Rose would fundamentally change the principle of operation of Sluijter.

For example, with respect to encoder 9, Sluijter states:

The input signal arrives through an input 19 of a transmitter ("TX") 1 . A splitter ("SPL") 7 splits up the input signal 19 into a signal that has a low frequency range and is processed by a first coder ("LFENC") 9 , and a signal that has a high frequency range and is processed by a second coder ("HFENC") 11 , the second coder 11 utilizing an LPC coder ("LPCENC") 2 and a signal strength meter ("SSM") 4 (col. 2, lines 55-61).

Sluijter separately explains that "the input signal is split up into two portions, so that an optimum coding for each of the two frequency ranges can be selected" (col. 2, lines 5-7). Thus, the principal of operation of Sluijter requires using LFENC 9 to encode **only** low frequency range signals so as to achieve optimum coding for the low frequency range.

In contrast, the ECSQ Encoder of Rose is not placed in series with a splitter and therefore does not appear to receive and process **only** low frequency signals. Further in contrast to Sluijter's low frequency encoder 9, the signal input to the ECSQ Encoder of Rose is in the companded domain.

Accordingly, the Office's proposed replacement of Sluijter's low frequency range encoder 9 with the entropy-coded scalar quantizers Encoder of Rose would fundamentally change the principle of operation of Sluijter. The change in principle of operation resulting from the modification of Sluijter is fatal to a prima facie case of obviousness, especially in view of the absence of a "convincing" line of reasoning as to why one of ordinary skill would have been motivated to make the suggested combination/modification. For this reason, Applicants assert that one skilled in the art would **not** have had a reason to combine the teachings of Sluijter with those of Rose, and the rejections under 103(a) are improper.

CONCLUSION:

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

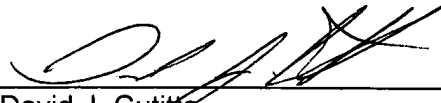
Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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